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ABSTRACT

In order to improve teacher education and the quality of teaching in classrooms, it is necessary to know what characterizes a competent teacher, what the best curriculum is for developing competent beginning teachers, and how teacher competence can be measured. This report summarizes research on those topics and suggests the following: (1) Because competence depends on so many factors, developing and determining teacher competence is a complex matter. (2) The teacher training curriculum should be structured so that teacher candidates develop their own frameworks for decision making based on, among other things, research knowledge, subject matter knowledge, practical knowledge, ethics, conceptions of teaching, and the information they have about the particular teaching context and the particular children. (3) Standardized tests of teachers' knowledge, pupil achievement scores and teacher evaluations have not proved effective means of measuring competence. The report concludes with seven suggestions which would lay a groundwork for defining, developing, and determining competence in teachers. A reference list is included. (PS)

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Three Crucial Issues Concerning the Preparation of Teachers for our Classrooms: Definition, Development, and Determination of Competence

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THREE CRUCIAL ISSUES CONCERNING THE PREPARATION OF TEACHERS FOR OUR CLASSROOMS: DEFINITION, DEVELOPMENT, AND DETERMINATION OF COMPETENCE

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Although "alternative routes" to becoming a teacher are increasing (Alternative certification for teachers, 1986), education for the teaching profession occurs primarily in more than 1,200 institutions of higher are education in the United States. Approximately 140,000 teacher candidates graduated each year. Teacher education programs are centered in schools, colleges, and departments of education; however, the arts and sciences faculty assume a major role in teaching both general knowledge, such as freshman English, and specialized content, such as the history major for prospective secondary teachers (Egbert, 1985).

There are many differences in how programs for the initial education of teachers are structured and in how states govern the programs. In one setting, a few faculty members may teach all the education courses and supervise student teaching; in another, the college of education may be an administrative unit in a university with 140 faculty members and many programs in addition to teacher preparation. The states vary in a similar way in what they prescribe for teacher education program course content (Egbert, 1985).

The image of teacher education programs is one of "easy access and easy exit." Among other factors, the large number of preparing institutions contributes to this image, as well as the much publicized data about the quality of teacher education students as measured on the SAT (Egbert, 1985; Gideonse, 1983). Despite the image, however, there is as much variation in student and program "quality" as there is in program content, program structure, and state governance. This variation reflects the complexity inherent in teaching, as Jackson (1986) so clearly and fully describes.

As a consequence of the many differences, it is impossible to describe the education of teachers with the same precision that one might, for example, describe the teaching of reading to first-graders. In this example, we know the population (first-graders); we know the typical setting (the first-grade clasroom with a first-grade teacher and small reading groups); we have theories about what to teach, how to teach it, and about how reading is learned; we have standard texts and curricula for the pupils; and we know with some specificity what variables need to be considered, such as developmental readiness to learn to read (Calfee & Drum, 1986). We also know clearly what the goal is--a child who can read--and how to measure it. The population, curriculum, methodology, and outcome of the teaching of prospective teachers, however, are not as clear-cut.

Despite the fact that teachers have been "trained and educated" for teaching positions in the United States for about 150 years, we are only now on the threshold of developing knowledge based on research which helps us to understand the process of educating for teaching, to raise fundamental questions about this process, and to structure a context so that the process encourages professional development. An examination of the 1985 edition of The International Encyclopedia of Education reflects this threshold. It contains seven entries under the heading of "Educational Technology" but only one entry for "Teacher Education: Concepts" and one entry for "Inservice Teacher Education." There are 31 entries, however, about teachers and teaching. Teacher education is much older than educational technology, yet much younger in its recognition as a process and context distinct from that of teaching. This simultaneous oldness and youngness gives rise to much of the debate today about teacher education: If it has existed for 150 years, why do we know so little about it? Is there, in fact, nothing to know? Is it true that anyone can be a teacher, as long as she/he knows the subject? These questions are implicit in the public debate about teacher education today.

The dearth of Encyclopedia entries about teacher education also reflects the lack of a substantial, coherent body of literature that addresses, at minimum, the following fundamental questions:

1. Definition of competence: What characterizes competent teachers?

2. Development of competence: What is the curriculum for developing competent beginning teachers?

3. Determination of competence: How is the competence of teachers measured?

Answers to these three questions are essential to improving teacher education and the quality of teaching in our classrooms. The consequence of not dealing with these questions is the maintenance of the status quo in education.

These crucial issues are described in order, and some directions for responses are outlined.

Definition of Competence: What Characterizes Competent Teachers?

What is a competent teacher? This is the fundamental question underlying the current public debate about the quality of education in our country. According to Judith Lanier, dean of the College of Education at Michigan State University and chair of the Holmes Group, "educators have reached no agreement on the definition of good teaching" (Lanier, 1986, p. 553). Reviewing some of these definitions will show us the nature of the various perspectives on this central question.

Brophy and Good (1986) say that "What constitutes 'teacher effectiveness' is a matter of definition, and most definitions include success in socializing

students and promoting their affective and personal development in addition to success in fostering their mastery of formal curricula" (p. 328). The same T.L. Good, in 1979, said that "teacher effectiveness refers to the ability of a classroom teacher to produce higher-than-predicted gains on standardized achievement tests" (cited in Shulman, 1986, p. 52). In seven years, then, one educational researcher has broadened his definition of effectiveness from merely increasing the classroom average on achievement test scores to include the successful socialization of students.

According to Shulman (1986), the definition used in research about teacher competence has been "a teacher is effective if, within the time period studied, students, averaged over the whole class, answered more questions correctly on multiple-choice standardized achievement tests than expected, based on the pretest performance. Under these conditions the students in the effective teacher's class are said to have learned more than expected" (p. 52). Shulman's summary of how educational research has defined the competent teacher sounds much like Good's 1979 definition, adding the notion that student learning is inferred from class averages on multiple choice tests.

What do teachers think about "teacher competence"? According to the co-directors of the Research and Development Center on Teacher Education, Sharon Feiman-Nemser and Robert Floden, "the practical wisdom of competent teachers remains a largely untapped source of insights for the improvement of teaching [in all areas]. Uncovering that knowledge is a major task in research...that can lead to policies that build on what teachers know" (1986, p. 505). Conceptions of the effective teacher over the years have included "possessor of desirable traits," "user of effective methods," "creator of a good classroom atmosphere," "master of a repertoire of competencies," and "professional decision maker who has not only mastered need competencies but learned when to apply them and how to orchestrate them" (Brophy & Good, 1986, p. 329). Katz and Raths (1985) would add that competent teachers have the "disposition" to apply and orchestrate these needed competencies. University of Georgia's teacher educators Payne and Manning (1985) conclude from recent research that an "often overlooked variable for success in the classroom is the characteristics inherent in teachers' personal dimensions--self-awareness, self-concept, attitudes, and expectations of self and others" (p. 81). Philip Schlechty said recently at a Wingspread Conference on teacher quality that most teachers are competent, and it is their job performance that is problematic.

How is job performance different from teacher competence? And how is teacher competence different from a teaching competency? According to Edmund Short at The Pennsylvania State University,

> Few issues in education have aroused greater controversy in recent years than those surrounding the nature of competence. Significant questions have been raised about what the term "competence" really means.... [The term] appears to refer to several different concepts, ranging from very narrow understandings of the term to very broad ones. Effective communication is consequently made difficult. (Short, 1985, p. 2)

To clarify the confusion, he presents four different conceptions of competence:

- o competence as behavior or performance, the doing of particular things independently of purpose or intent.
- o competence as command of knowledge or skills, involving choosing and knowing why the choice is appropriate.
- o competence as level of capability which has been "sufficient" through some judicious and public process; this sufficiency indicator may fluctuate since it involves a value judgment.
- o competence as a quality of a person or state of being, including more than characteristic behaviors: "performances, knowledge, skills, levels of sufficiency, and anything else that may seem relevant, such as intent, or motives, or attitudes, or particular qualities" (Short, 1985, p. 5). This fourth definition, he says, implies that many theories about teacher competence can exist, all of which can be justified.

Zahorik (1986) supports this argument for multiple theories of teacher competence, based on the existence of multiple conceptions of good teaching:

> There are some teaching skills that all teachers ought to possess. All teachers, for example, ought to be able to give lucid explanations, they ought to be able to structure knowledge in a way that promotes understanding, and they ought to be able to manage groups of learners. But beyond a few obvious skills such as these, identifying universal teaching skills is difficult because teaching skills emerge from one's conception of good teaching. (p. 21)

The conception of good teaching varies developmentally, he suggests; it is different for a beginning teacher than for a mature teacher. Not only does the conception of good teaching vary with teachers' development, there are also qualitatively different conceptions. Fenstermacher and Soltis (1986) present three qualitatively different conceptions of teaching, each with its own foundations in history and research: the teacher as an "executor," whose purpose is to use the best skills and techniques available to bring about specific learning in students; the teacher as a therapist, whose purpose is to help students grow personally; the teacher as a liberator, whose purpose is to develop in pupils autonomy, rationality, and morality. What the teacher chooses to do in the classroom depends on his conception of his teaching role, and how his competence is determined depends on this conception as it is expressed in the assessment measures.

In addition to developmental and qualitatively different conceptions of teaching, contextual variations also play a role in defining teacher competence. According to Brophy and Good (1986), effectiveness

> varies with context. What appears to be just the right amount of demandingness (or structuring, or praise, etc.) for one class might be too much for a second class but not enough for a third class. Even within the same class, what constitutes effective instruction will vary according to subject matter, group size, and the specific instructional objective being pursued. (p. 370)

Thus, how teacher competence is defined depends on a number of things:

1. the outcomes desired from teaching, from increased classroom average scores on standardized achievement tests to the development of pupils' social skills.

2. the length of time in teaching.

3. the conception of the teacher's role.

4. the context for teaching, from first grade to twelfth grade, college bound to learning disabled, urban to rural, and many other varying contexts.

5. the level of competence according to Short (1985), from competence in a single behavior to competence as a quality of a person.

With the definition of teacher competence dependent on so many factors, the development and determination of teacher competence is clearly a complex matter.

Development of Competence: What Is the Curriculum for Developing Competent Beginning Teachers?

Teacher candidates in the undergraduate curriculum typically take courses from three different categories--general studies, subject specialization, and professional studies. About one-third of the courses are general studies, which all liberal arts students take, such as math, natural and social sciences, and humanities. The second category is the subject specialization, or subject major. Secondary teacher candidates often have essentially the same subject matter course requirements as do nonteaching majors in that field (history, chemistry, or English, and so forth). Elementary teacher candidates usually major in elementary education with a posssible subject area minor. Professional studies, the third category, includes foundations courses, such as child and adolescent development, educational psychology, and history and philosophy of education, as well as methods courses and student teaching (Egbert, 1985; Lanier & Little, 1986).

Beyond this general description, it is hard to characterize the curriculum for the initial preparation of teachers. One college may require 20 credit hours in math and natural sciences in general studies, while another may require only two. Some require an educational psychology course

in professional studies; some do not. Some secondary programs require reading methods; others do not. The list of variations in required curriculum content seems endless. Both states and institutions control what these requirements may be; teacher education is "just about whatever the state or the faculty defines it as being" (Egbert, 1985, p. 17).

While there appears to be increasing agreement among some leading educational thinkers about essential topics to be addressed in the preservice professional curriculum, the evidence indicates that programs have yet to be affected by this thinking (Evertson, Hawley, & Zlotnik, 1985; Weil, 1985). Moreover, what we know about effective teaching from research we have learned only in the past decade, so that a significant body of research knowledge has not, until now, been available for teacher education programs (Brophy & Good, 1986). Even this relatively new body of knowledge is limited. According to Barak Rosenshine, a prominent researcher in this area,

> The research on effective teaching conducted since 1974 has yielded a pattern of instruction that is particularly useful for teaching a body of content or well-defined skills...[e.g., mathematical procedures, science facts, grammatical rules]. These findings are less relevant for teaching in areas that are less well-structured, that is, where the skills do not follow explicit steps or the concepts are fuzzier and entangled. Thus, the results of this research are less relevant for teaching composition, writing of term papers, reading comprehension, analyzing literature or historical trends. (Rosenshine, 1986, p. 60)

Other areas which have been suggested as content for the teacher education curriculum and which have a substantial research knowledge base include the language of classroom communication, teacher planning and decision-making, the teaching context (such as grade level, curriculum, and organizational dynamics), and school effectiveness knowledge. Virginia Koehler, formerly associate director for teaching and learning at the National Institute of Education and now a teacher educator, and other writers discuss these in a volume entitled Essential Knowledge for Beginning Educators (Smith, 1983).

More subject expertise also has been proposed as a way to increase teaching effectiveness; there is little research, however, to indicate that increasing teachers' subject knowledge beyond the current typical certification requirements will significantly increase teacher effectiveness (Evertson, Hawley, & Zlotnik, 1985). It is also argued that broadening the liberal arts foundation will increase the effectiveness of teachers; however, empirical evidence does not exist to support this argument (Evertson, Hawley, & Zlotnik, 1985).

Lee Shulman, a recent past president of the American Educational Research Association (AERA), has criticized the research about teaching as it relates to subject matter expertise, saying it has generally been ignored. While subject content areas have been used as context variables--for example, in fifth-grade mathematics classes, certain behaviors of teachers have been

associated with certain behaviors of their pupils--no research has been done on the subject matter content itself or the "organization of the content knowledge in the minds of the teachers" (Shulman, 1986, p. 6). He points out the serious consequences of this omission for our state programs of teacher certification and evaluation: "Policymakers read the research on teaching literature and...find little or no reference to subject matter, so the resulting standards or mandates lack any reference to content dimensions of teaching" (p. 6). He continues that what we do not have answers to are "questions about the content of the lessons taught, the questions asked, and the explanations offered. From the perspective of teacher development and teacher education, a host of questions arise. Where do teacher explanations come from? How do teachers decide what to teach, how to represent it, how to question students about it and how to deal with problems of misunderstanding?" Research has not provided answers for what forms of content knowledge should be included in the preservice curriculum, or for how much content knowledge is sufficient for the beginning teacher.

Beyond more research knowledge and subject matter content, other areas have been proposed as important to the development of the teacher candidate. Professional ethics is one (Soltis, 1986). Rich (1985) says, "In sharp contrast to increased courses in medical, legal, and business ethics, few teacher education programs provide a systematic study of professional ethics, despite the fact that teachers will be held fully accountable for observing ethical behavior" (p. 21). Among the functions of professional ethics, he says, is to assure "that professional services will be rendered in accordance with reasonably high standards and acceptable moral conduct... [and to deter] increased government intervention" (p. 21). He argues that a necessary condition for the development of competent teachers and the development of teaching as a full-fledged profession is the observation of ethical principles, and that

> Ethical behavior is more complex than following the rules of a code: it involves learning to think, act, and acquire the attitudes of a professional teacher and to be guided by one's own philosophy of education. It is necessary for the prospective teacher to adopt relevant ethical principles, understand the grounds for holding them, and practice applying them in daily situations. (pp. 22-23)

The resources we have for such study, he concludes, are minimal, particularly compared to medical ethics. He cites a 1962 source recommending that credit hours in professional ethics be required in state certification regulations; while no state currently has such a requirement, the new teacher education program standards for accreditation require the inclusion of the study of professional ethics (NCATE, 1985). The theme of the most recent Journal of Teacher Education (Vol. 37, No. 3) is professional ethics in teacher education, reflecting teacher educators' increasing interest in ethics education.

Another area for the attention of the preservice teacher education curriculum has been labeled "dispositions" by teacher educators Lilian Katz and James Raths (1985). Dispositions are "trends in behavior" and may

either help to achieve or obstruct effective teaching. Their research suggests that teacher educators believe that dispositions contribute more to teacher effectiveness than either skills or knowledge. Some examples of dispositions they provide are:

- The disposition to experiment with alternative methods of teaching, and to examine the effects of methods used and modify them accordingly.
- The disposition to seek help with one's teaching when confronted with a problem.
- The disposition to explain and clarify and provide assistance to students who have difficulty understanding.

The fact that a teacher or teacher candidate has a particular skill is not what is ultimately important, they contend; it is whether the teacher is disposed to use that skill. The implication for the teacher education curriculum, then, is the incorporation of the idea of dispositions into the curriculum goals.

Determining the skills that teachers should learn must be related to the needs of teachers as they develop from novice to mature teachers, according to Zahorik (1986). It is the practical, specific skills derived from science-research that should be emphasized in the preservice program. Lesser emphasis at this point should be placed on what Zahorik calls the "art-craft skills" of observation, reflection, and creation. An important concept that he adds to the curriculum debate is that teacher education is a "long-term endeavor" and that the developmental needs of the teacher candidate should play a role in professional curriculum decisions. Much more attention needs to be given to what the beginning teacher needs to know, and, beyond that, what developing teachers need to know at different stages.

What teachers should learn before they begin to teach, then, is clearly an important debate. How teachers can be taught effectively to teach is also an important question for the curriculum. This question includes methods for teaching teachers. One example of a professional curriculum method is microteaching, a simulation technique that emphasizes one skill to be learned, such as questioning students in a particular way. The teacher candidate prepares and delivers a short lesson with this focus, and receives immediate feedback. Research shows that this can be an effective teacher education method (Evertson, Hawley, & Zlotnik, 1985).

Student teaching, another method of the curriculum, has traditionally been an essential part of teacher preparation. New teachers usually cite student teaching as the most useful part of their professional preparation (Berliner, 1985). Research does not provide adequate evidence, however, that student teaching as it is typically encountered is an effective way to prepare teachers (Evertson, Hawley, & Zlotnik, 1985; Berliner, 1985).

David Berliner, another past president of AERA, argues that student teaching is "injurious" and "retards the development of analytic skills and thus, in its present form, militates against the development of the profession" (Berliner, 1985, p. 3). He advocates the development of pedagogical laboratories in which student candidates can be taught concepts, expert teachers can provide critiques of the lessons, and teaching activities can be analyzed by the teacher candidates, their peers, and the pupils themselves. Resources for such laboratories would include

> video equipment and the money to pay experts to analyze teacher performance, just as do the track and football coaches. The average teacher in training in the United States gets very little analysis of his or her teaching performance with video tape. Television is useful, too, for learning the educational significance of our most treasured concepts...such as intelligence, where the television can show the responses of extremely bright, average, and very dull children to the same stimulus.... Bloom's taxonomy can be illustrated with television tapes of children struggling with questions at different levels of the taxonomy as they provide answers to different kinds of questions....we must question whether beginning teachers will be able to [use these concepts] if the concepts are taught only as book information. (Berliner, 1985, pp. 6-7)

Another "methods" question is how teacher candidates can be taught the skills and procedures and thought processes that they do not understand that they need to know (Koehler, 1985). This difficulty for the professional curriculum has been labeled the "feed-forward" problem:

> All preservice training can be characterized as anticipatory socialization, which inevitably involves giving students answers to questions not yet asked, and not likely to be asked until students are in the thick of actual service. This aspect of socialization can be called the feed-forward problem....It includes resistance from the student at the time of exposure to given learnings and, later, protestations that the same learnings had not been provided, should have been provided, or should have been provided in stronger doses. (Katz, et al., 1981, p. 21, cited in Koehler, 1985)

Answers are needed to these questions about how to best teach teacher candidates. The knowledge, information, and skill they must have should be taught

> in ways that respect the uniqueness of each classroom and recognize that classrooms are complex social settings in which teachers must process a great deal of information rapidly, deal with several agendas simultaneously, and make quick decisions throughout the day. Thus, rather than trying to translate it into overly rigid or generalized prescriptions, teacher educators should present this information within a decision-making format that

> enables them to examine concepts critically and adapt them to the particular contexts in which they teach....Research on how teacher education programs can accomplish this effectively is badly needed. (Brophy & Good, 1986, p. 370)

This "decision-making format" to which Brophy and Good refer is a critical aspect of the "how" of the preservice teacher education curriculum. We must understand how to structure the curriculum so that teacher candidates develop their own frameworks for decision making based on, among other things, research knowledge, subject matter knowledge, practical knowledge, ethics, conceptions of teaching, and the information they have about the particular teaching context and the particular children.

Determination of Competence: How Is the Competence of Teachers Measured?

Even though we have no consensus about what constitutes a competent teacher or about what constitutes an essential curriculum for developing competent teachers, we nevertheless try to measure competence. Judgments about teachers' competence are being made by states, the media, and the public in general, without a clear understanding of what is meant by competence and without a public delineation of the conception of good teaching.

There are three fundamental ways that are used in our educational system to determine competent teaching: teacher testing, teacher evaluation, and teacher certification. These three ways are different in concept, but closely tied procedurally, since testing and evaluation are increasingly becoming part of the certification process (AACTE, 1986).

Tests assign labels to individuals, called "scores," from which we infer the degree of teacher competence. The following are the most widely-used tests of teacher competence (AACTE, 1986):

- SAT or ACT scores. Standardized academic aptitude tests typically used for college admission.
- Californaia Basic Educational Skills Test (CBEST). Standardized test measuring basic reading, writing, and mathematics skills.
- Pre-Professional Skills Test (PPST). Also a standardized test measuring basic skills.
- State-developed tests, either in basic skills or professional knowledge.
- National Teachers Examination (NTE). The NTE has several parts: General Knowledge, Professional Knowledge, Communications Skills, and subject area exams.

Forty-four of the 50 states have mandated some form of at least one of these measures for use at some time during the teacher preparation period, according to the AACTE Teacher Education State Policy Survey (1986). The minimum scores, the competence "sufficiency indicator" in Short's terminology (1985), vary from state to state, and in some states, they vary among institutions. In some states, the minimum score has been stated as simply a "passing" grade, since score requirements vary for each test administration. The mandating of these tests to assure competent teaching has become widespread "because they are readily available, relatively inexpensive, and administratively simple" (George, 1985, p. 6). Little evidence exists, however, that these tests can predict teachers' effectiveness in the classroom. According to Dilworth (1984), "No certification examination purports to determine an individual's ability to teach. The exams merely seek to measure a person's own knowledge of what the experts consider to be the necessary basic skills" (p. 31). Research does suggest that the higher the verbal ability of teachers, the higher will be the verbal test scores of their students, especially low income minority students (Bowles & Levin, 1968). Beyond this finding, the research about predicting the performance of teachers from tests is limited and mixed, as the following indicate.

1. Academic Aptitude Tests: Ratings of teacher performance by principals and supervisors are not related to teachers' scores on academic aptitude tests, such as the SAT (Schalock, 1979; Soar, Medley, & Coker, 1983).

2. Grade Point Averages: Teachers' job performance, as measured by principals and trained observers, has been found to be positively related to grade point averages in some studies, negatively related in others, and in some, no relationship has been found (Evertson, Hawley, & Zlotnik, 1985; Lanier & Little, 1986).

3. National Teachers Examination (NTE): Teachers' scores on the NTE have had no consistent relationship to pupils' gains in achievement or observers' assessments of teacher performance (Lanier & Little, 1986; Ayers & Qualls, 1979; Andrews, Blackmon, & Mackey, 1980; Quirk et al., 1973). According to an article in the Harvard Educational Review, the NTE "was not designed for the direct evaluation of a teacher's performance but to gauge the academic and knowledge skills of prospective teachers. Therefore, the test should not be used to determine the compensation, retention, advancement, financial supplement, or employment changes of inservice teachers" (Haney et al., 1978, p. 471, cited in Dilworth).

4. State-developed Tests of Subject and Professional Knowledge: These tests are so new that research indicates little about whether they can predict teacher effectiveness.

These standardized tests, then, do not provide us with reliable distinctions among those who are more competent and less competent as teachers. Even so, "competency" tests are being used in teacher education programs as entrance and exit requirements, in the certification process (both initial and re-certification), in hiring and tenure decisions, and in promotion decisions (Hammes, 1985).

The current approach to measuring the competence of teachers on standardized paper-and-pencil tests is inadequate to measure the complexity of the traits and abilities that teachers should have. Also, there is little agreement about what these traits and abilities should be. Consequently, we do not know the degree to which any particular score on any particular teacher test will help or hinder our children's learning in the classroom.

What we do know about teaching competence comes from the research base which links particular teacher behaviors to pupil achievement, discussed in the previous section on curriculum. To the degree that particular teacher behaviors, such as questioning skills, are conceived to be part of a broader definition of teacher competence, then the measurement of these behaviors is an appropriate measure of competence. While pupil achievement scores have informed us about the effects of teacher behaviors, according to Shavelson, Webb, and Burstein (1986) they are inappropriate for use as measures of teacher competence for a number of reasons.

Teacher evaluations assess actual job performance. They are typically conducted by the building principal, and the primary purpose may be either diagnostic, providing feedback to the teacher about possibilities for improved performance, or related to retention. In fact, the prevalence of successful teacher evaluations is not great; teachers resent evaluations by principals who do not know the teachers' fields, and principals' evaluations are often erratic and superficial (Lanier & Little, 1986; Brophy & Good, 1986). Thus, while the idea of teacher evaluations as a way to assure teacher competence seems appropriate to meet the complexity of the task, the implementation of the idea is lacking.

The purpose of the teacher certification process is to ensure that individuals who teach in a particular state meet minimum standards for competence (Robinson, 1985). These minimum standards are set by each state (NASDTEC, 1984); competence has been typically defined to include the completion of such requirements as course credit hours in subject matter, professional studies, and student teaching. Increasingly, the requirements are including minimum scores on standardized tests (AACTE, 1986). These requirements, which vary greatly from state to state, have not been studied for their relationship to teaching effectiveness (Hawk, Coble, & Swanson, 1985). Therefore, fulfillment of these entry level requirements does not fulfill the need to determine or assure competent teaching. Given what is known about competency testing, it appears that the increasing use of tests in the certification process will not increase the assurance of competent teachers.

Adding to this problem, emergency certificates are issued when there is a teacher shortage to individuals who do not meet the state's regular certification requirements (AACTE, 1986; Roth, 1984). In this circumstance, those with undergraduate degrees are allowed to teach, without having completed a formal preservice professional curriculum.

Another problem is misassignment; teachers who hold certificates in one field are being assigned to teach in other fields for which they are

unprepared (Robinson, 1985; Roth, 1984). According to a recent report, we do not know precisely how many misassignments there are, but it is a more common occurrence than official statements indicate. The report states that the misassignment of teachers "constitutes a scandal in the making for the entire profession":

> Misassignments occur because many states grant local school administrators authority to assign certified teachers outside their fields of academic preparation under certain circumstances, and even specify that limited amounts of out-of-field teaching need not be reported as such.
>
> Individuals originally certified in English may be assigned to teach science; a vocational education instructor may teach a social studies class.
>
> Nationwide, thousands stand before thousands upon thousands of children, charged with instruction in disciplines not their own. And these are not peripheral subjects but English and math, history and science. The consequences for the nation's students, supposedly being educated in these basic subjects, are enormous. (Robinson, 1985, p. 6)

Both these variations in the certification process--emergency certification and misassignments--render useless certification's stated purpose to assure minimally competent teachers in our classrooms.

Directions for Resolution of the Issues

The following are directions being offered by those in the field for resolution to these three interrelated issues:

1. Development of professional examinations for teachers, which reflect both content and process knowledge and which are likely to be passed only by those who have been professionally educated for teaching (Shulman, 1986). A major effort is being funded by the Carnegie Corporation to develop teacher assessments that are comprehensive, that may take several days to complete, and that would assess teachers' classroom performance, their planning skills, and their interpersonal relationships to students (Report on Education Research, 1985).

2. Establishment of a Professional Standards Board and a certification process at the national level, similar to what is done in the medical, legal, and accounting professions. The report from the Carnegie Task Force on Teaching as a Profession has as a key aspect of its plan the formation of a national certification board organized with a regional and state membership structure (Carnegie Forum, 1986). This board would establish standards for what teachers need to know and be able to do and would certify teachers who meet those standards.

3. Incorporation of a well-defined research knowledge base into the professional preparation programs. The National Council for the Accreditation of Teacher Education has recently adopted new standards for its program accreditation process. One of the five standards concerns the knowledge base for professional education. All institutions which are accredited by NCATE will have to meet this standard which includes evidence that "established and current educational research and essential knowledge of sound professional practice...[are incorporated] in all professional education programs." Programs must have formally adopted a professional education model, with rationales and undergirding knowledge bases clearly stated (NCATE, 1985, p. 15). Various state efforts are also underway. Nebraska, for example, is using a consortium of institutions to decide what research knowledge to include in programs and how to incorporate that knowledge (Egbert & Kluender, 1984). At the national level, support for this work has come from the Office of Educational Research and Improvement. Twenty-nine demonstration projects were funded in the fall of 1985 to incorporate research knowledge into teacher education programs; this funding was based on results of an earlier pilot project reported in a full issue of the Journal of Teacher Education (1984, Vol. 35, No. 4).

4. Research on effective teachers--their attitudes, beliefs, and dispositions--and incorporation of those ways of thinking into teacher preparation programs. On the basis that teacher attitudes have been found to be related to their performance and to pupil outcomes, a study of staffing and schooling currently being conducted by the Rand Corporation proposes to examine the possible link between teachers' attitudes and their teaching practices.

5. Assessment of misassignments. The same Rand study of staffing will determine the prevalence of misassignments in the sample.

6. Study of the processes of preservice teacher education, and how knowledge, skills, attitudes, thought processes, and procedures can be taught most effectively to teacher candidates (Brophy & Good, 1986; Lanier & Little, 1986).

7. Improvement of conditions in the workplace, so that there will be incentives for those individuals who have the capability to become competent teachers (Carnegie Forum, 1986). According to Samuel Bachrach, a professor of organizational behavior at Cornell University, "It is the conditions under which teachers work that are the prime de-motivators in schools...if you don't do something about the workplace, you're not going to attract anyone into teaching to start with" (Olson, 1986, p. 43). Bachrach was the director of an extensive survey of 1,800 teachers to discover the conditions in schools which prevent teachers from doing their jobs well. Bachrach says, "If you compare these data to those for other organizations then schools are some of the least supportive organizations that I have ever seen in my live" (Olson, 1986, p. 1).

If the workplace is ignored, the three issues discussed in this chapter --defining, developing, and determining competence in teachers--will become non-issues; few individuals with the capacity for competence will want to work in a setting which does not appreciate, support, or allow competence.

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